

# Interdisciplinary research

'Eco-build', 'green build', 'Passivhaus', 'low carbon home' and 'ecotowns' are all terms which are starting to be applied to any number of house build schemes in the UK. It would appear to many that the UK has environmental builds popping up in a thousand guises all over the country. Who is mapping these new builds and eco-retrofits? Is there a central database from which knowledge can be drawn asks Jo Moulds?

This is part of what an academic project, entitled InCluESEV, has been set up to achieve. InCluESEV stands for 'interdisciplinary cluster on energy systems, equity and vulnerability' and is concerned with understanding the nature of energy vulnerabilities associated with different physical, social and geographical contexts. The cluster is funded under the Research Council's UK (RCUK) energy programme and its membership is drawn from over 40 organisations - universities, businesses and charities - in the UK and internationally. In March 2011, a workshop will bring together the strands of the project, where academics from the UK and abroad will have visited various eco build projects, both large and small-scale, and will come together in Coventry to report on their visits.

"In a way, every new eco build which is being built at the moment is like setting up a new laboratory, experimenting with different environmental technologies," says Dr Dan van der Horst, a lecturer in environmental policy and management at the University of Birmingham and, together with Dr Mark Gaterell, the director of research for sustainable engineering at the University of Birmingham, they are responsible for the built environment work package for InCluESEV.

Dan van der Horst is a social scientist with a particular interest in how renewable energy technologies affect communities on a local level. "With InCluESEV, there is a growing membership of academics and practitioners. The project will run until the end of 2011 and is purposefully bringing together different approaches from different academic disciplines (including geography, sociology, engineering, design, earth sciences, politics, economics, planning, physics and anthropology). The aim is to bring together leading expertise and research activity from diverse funding programmes in energy, climate change and environment. The funding streams include the Engineering and Physical Sciences Research Council (EPSRC), the Economic and Social Research Council (ESRC), the Cross-Council Research Programmes from Research Councils UK



The Findhorn eco-village in Scotland will be one of the many projects included in this study. Photo © Findhorn Foundation

## Who is involved in InCluESEV?

Universities involved in the InCluESEV project include: Kings College London, Durham, Lancaster and Birmingham universities, Cardiff, Edinburgh, Reading, Brunel, Surrey, Manchester, Oxford, Newcastle, the Centre for Ecology & Hydrology, part of the Lancaster Environment Centre in Lancaster ([www.ceh.ac.uk](http://www.ceh.ac.uk)), the British Geological Survey BGS University Funding Initiative ([www.bgs.ac.uk](http://www.bgs.ac.uk)) and the Macaulay Land Use Research Institute ([www.macaulay.ac.uk](http://www.macaulay.ac.uk)).

Four non-academic members are each centrally involved with issues of energy and equity - National Energy Action ([www.nea.org.uk](http://www.nea.org.uk)), Eaga ([www.eaga.com](http://www.eaga.com)) and Warm Zones ([www.warmzones.co.uk](http://www.warmzones.co.uk)) are key actors in providing solutions that address fuel poverty in the UK, whilst the Building and Social Housing Foundation ([www.bsbf.org](http://www.bsbf.org)) promotes sustainable housing for vulnerable communities in the UK and internationally.

([www.rcuk.ac.uk](http://www.rcuk.ac.uk)), the EU and the private sector. "By the end of the project, we believe we will be actively collaborating with hundreds of academics," says Dan, "and the website and email network will reach many, many more". The project is aimed mainly at academics, practitioners, policy makers and postgraduate students but the findings will filter down into case studies for undergraduates, "as a by-product if you like", says Dan.

The academics from all over the UK have their own networks and knowledge base already. The project aims to further knowledge and cross-pollinate findings. Interest from abroad has come from Germany and New Zealand so far. A New Zealand academic would like to come to the UK in March 2011 and present about eco-building in New

**An invitation to contribute to InCluESEV?**

There are more and more (new built or refurbished) low carbon homes and residential developments in the UK and overseas. These take a wide variety of forms, from single dwellings, to multi-dwelling developments, co-operative housing and housing association developments, in some cases focused also on realising fuel poverty objectives. There are many interesting questions about how these dwellings are being designed and built, the processes and organisations involved and how expectations are realised in practice once people are living in them. These include whether or not the expected carbon savings are being realised and how residents experience the living conditions and comfort of such developments. The March 2011 workshop will discuss the lessons learned from existing projects. The organisers are calling for initial accounts from a range of such projects to be presented at the workshop. In order to support the collection of this evidence they are offering to reimburse travel and subsistence costs for preliminary fact-finding visits to such projects. They particularly encourage academics to visit places where they may wish to develop or strengthen longer-term collaboration with private sector, government or third sector organizations or vice versa. Contact Mark Gaterell (m.gaterell@bham.ac.uk) or Dan van der Horst (d.vanderhorst@bham.ac.uk) with details of the development you wish to visit (details of the project and the sort of issues you want to find out about, or the sort of questions or topics you expect to cover), and provide an estimate of the costs. In return for covering these expenses, the organisers would expect (a) to see a brief visit report fairly soon after the trip has taken place (3-4 pages), and (b) to have the findings from the visit presented at the workshop in 2011.

Zealand which Dan says will be interesting as the philosophy over there is much different from the UK. The project team has also received an invitation to visit the Vauban District in Freiburg, Germany, a unique urban greening project in terms of scale and vision.

"A hope for the project is to foster a better integration and understanding of how residents live or wish to live in eco-buildings, with engineers' know-how on how to build low carbon structures; how the 'running' of a building gives people comfort, a feeling of well-being and security and of understanding the environmental technologies within a building. Traditionally, there have been problems with stakeholding and ownership of the environmental technologies. People are wasting energy and losing the low-carbon benefit because they don't understand how the technologies in their homes work. An example is someone fitting an electric shower when there is already a solar hot water system because they were 'used' to having an electric shower," says Dan.

"It is not such a problem in self-build," says Dan, "but in social housing and with eco-towns, there is the risk of a disconnect. We are exploring how to fill the gaps with education, which is not the best solution in the way that it is an 'add-on' at the end of the process, but with co-design, where the customers, the homeowners or tenants, are involved at the beginning of the design process."

Dan believes that energy efficiency within the home is the elephant in the room. You can get the materials right but if energy is being wasted, or residents feel uncomfortable, then the terms 'eco-design' or 'green build'

are not justified. An ultimate aim is a full energy system that is completely localised within the home you live in. The homeowner or tenant has a sense of control over their energy and comfort and understands precisely where energy is spent, how it is sourced, how to save it and where to use it most effectively.

Dr Mark Gaterell has ongoing collaborations with academics from the architecture world, but not many architects and surveyors have so far engaged with InCluESEV, so it would be extremely relevant for them to become involved in the workshop in March 2011.

The two themes of the main project are: 'energy vulnerability and resilience in the home' and 'equity and low carbon energy systems'. Within the two themes, there are eight work packages. These are: 'understanding and conceptualizing energy vulnerabilities and resilience'; 'exploring the diversity of energy vulnerabilities'; 'built environments and designing for energy resilience'; 'scenarios of future energy vulnerability and resilience under climate change'; 'conceptualising equity and justice in energy systems'; 'whole-system equity analysis of new nuclear generation capacity'; 'whole-system equity analysis of carbon capture and storage', and 'whole-system equity analysis of micro-generation technologies'. Academics and practitioners are invited to get in touch if they would like to give input into any of the areas of the project.

For the visits up to the end of this year, academics are being particularly encouraged to visit places where they may wish to develop or strengthen longer-term collaboration with the private sector, government or third sector organizations or vice versa, therefore gaining the maximum amount of 'worth' for the project. "It is essentially a networking and research agenda-setting project," says Dan van der Horst, "but an interesting one which should provide valuable additional knowledge about eco-builds in the UK and our situation now, and where we can or would like to be, in the future."

**Jo Moulds**

**Academics from around the UK will spend the next few months visiting eco-builds and reporting their findings in March 2011. For more information, visit [HTTP://SITES.GOOGLE.COM/SITE/INCLUESEV](http://sites.google.com/site/inclueseV)**

Jo Moulds is a freelance journalist and marketer who specialises in working with environmental companies. Previously the Marketing & PR Manager for award-winning British environmental company, Remarkable, which makes products from UK recycled waste, Jo now works with a number of companies and universities in the environmental and sustainability fields. Jo has written for The Independent, Sunday Times Inside Out, Reader's Digest, Sustainable FM and Resource Publishing and has spent the last two years setting up Appleyard Media Ltd, working with Ross Appleyard of Sky News. [JO@JOMOULD.CO.UK](mailto:JO@JOMOULD.CO.UK)

